

## WHAT IS CLAIMED IS

1. An opening flap, in particular flue gas escape flap, comprising
- a frame (1);
  - 5 - a flap (5) that is articulated to the frame (1);
  - a holding device (8) for keeping the flap (5) in a closed position;
  - a lift arm (10) which is mounted for pivoting about a first joint (11) that is stationary relative to the frame (1);
  - a principal energy accumulator (12), a first end of which is articulated
  - 10 to a second joint (14) that is stationary relative to the frame (1), and a second end of which is articulated to the lift arm (10) by a third joint (13) at a distance from the first joint (11); and
  - a secondary energy accumulator (16), a first end of which is articulated
  - 15 to the lift arm (10) between the first and the second joint (11, 13), and a second end of which is articulated to the flap (5);

wherein, articulated to the lift arm (10) by a pivot joint (18) is a double-armed lever (17, 17'), to a first end, turned towards the principal energy accumulator (12), of which the secondary energy accumulator (16) is articulated by its first end, and to a second end, turned towards the flap (5),

20 of which is articulated a first end of a tie (20) which is articulated by a second end relative to the frame (1).

2. A flap according to claim 1, wherein the double-armed lever (17, 17') and the tie (20, 20') are arranged and designed such that, at the beginning
- 25 of the opening motion of the flap (5), the first end of the secondary energy accumulator (16) is moved counter to a direction of extension of the secondary energy accumulator (16), pivoting the double-armed lever (17, 17'); and wherein the pivoting motion of the double-armed lever (17, 17') reverses as the opening motion of the flap (5) proceeds.

3. A flap according to claim 2, wherein a stop (24, 30) is provided on the lift arm (10) within the pivoting travel of the double-armed lever (17, 17').

5 4. A flap according to claim 1, wherein the following applies to the extension force ( $F_{12}$ ) of the principal energy accumulator (12) in relation to the extension force ( $F_{16}$ ) of the secondary energy accumulator (16):  $F_{12} \geq F_{16}$ .

5. A flap according to claim 1, wherein the following applies to the extension force ( $F_{12}$ ) of the principal energy accumulator (12) in relation to the extension force ( $F_{16}$ ) of the secondary energy accumulator (16):  
10  $6 F_{16} \geq F_{12} \geq 2 F_{16}$ .

6. A flap according to claim 1, wherein the following applies to the extension force ( $F_{12}$ ) of the principal energy accumulator (12) in relation to the extension force ( $F_{16}$ ) of the secondary energy accumulator (16):  
15  $10 F_{16} \geq F_{12} \geq 2 F_{16}$ .

7. A flap according to claim 1, wherein the secondary energy accumulator  
20 (16) is a gas spring (16) that is damped in the direction of extension.

8. A flap according to claim 1, wherein the double-armed lever (17') has an oblong hole (29) in the shape of a segment of a circle, which is concentric of the pivot joint (18), with a stop pin (30) guided therein that is formed on  
25 the lift arm (10).

9. A flap according to claim 1, wherein the tie (20') has an oblong hole (31) where a stop pin (32) is guided that is mounted on the double-armed lever (17').

5 10. A flap according to claim 1, wherein at least one of the principal energy accumulator and the secondary energy accumulator is a gas spring (12, 16).

11. A flap according to claim 1, wherein at least one of the principal energy accumulator and the secondary energy accumulator is a compression strut  
10 (33).

12. An opening mechanism for an opening flap, in particular for a flue gas escape flap, the opening flap comprising

- a frame (1);
- 15 - a flap (5) that is articulated to the frame (1); and
- a holding device (8) for keeping the flap (5) in a closed position; and the opening mechanism comprising
- a lift arm (10) which is mounted for pivoting about a first joint (11) that is stationary relative to the frame (1);
- 20 - a principal energy accumulator (12), a first end of which is articulated to a second joint (14) that is stationary relative to the frame (1), and a second end of which is articulated to the lift arm (10) by a third joint (13) at a distance from the first joint (11); and
- a secondary energy accumulator (16), a first end of which is articulated  
25 to the lift arm (10) between the first and the second joint (11, 13), and a second end of which is to be articulated to the flap (5);

wherein, articulated to the lift arm (10) by a pivot joint (18) is a double-armed lever (17, 17'), to a first end, turned towards the principal energy accumulator (12), of which the secondary energy accumulator (16) is ar-

ticated by its first end, and to a second end, turned towards the flap (5), of which is articulated a first end of a tie (20) which is articulated by a second end relative to the frame (1).

5 13. An opening mechanism according to claim 12, wherein the double-armed lever (17, 17') and the tie (20, 20') are arranged and designed such that, at the beginning of the opening motion of the flap (5), the first end of the secondary energy accumulator (16) is moved counter to a direction of extension of the secondary energy accumulator (16), pivoting the double-  
10 armed lever (17, 17'); and wherein the pivoting motion of the double-armed lever (17, 17') reverses as the opening motion of the flap (5) proceeds.

14. An opening mechanism according to claim 13, wherein a stop (24, 30) is provided on the lift arm (10) within the pivoting travel of the double-  
15 armed lever (17, 17').

15. An opening mechanism according to claim 12, wherein the following applies to the extension force ( $F_{12}$ ) of the principal energy accumulator (12) in relation to the extension force ( $F_{16}$ ) of the secondary energy accumulator  
20 (16):  $F_{12} \geq F_{16}$ .

16. An opening mechanism according to claim 12, wherein the following applies to the extension force ( $F_{12}$ ) of the principal energy accumulator (12) in relation to the extension force ( $F_{16}$ ) of the secondary energy accumulator  
25 (16):  $6 F_{16} \geq F_{12} \geq 2 F_{16}$ .

17. An opening mechanism according to claim 12, wherein the following applies to the extension force ( $F_{12}$ ) of the principal energy accumulator (12)

in relation to the extension force ( $F_{16}$ ) of the secondary energy accumulator (16):  $10 F_{16} \geq F_{12} \geq 2 F_{16}$ .

18. An opening mechanism according to claim 12, wherein the secondary  
5 energy accumulator (16) is a gas spring (16) that is damped in the direction of extension.

19. An opening mechanism according to claim 12, wherein the double-  
armed lever (17') has an oblong hole (29) in the shape of a segment of a  
10 circle, which is concentric of the pivot joint (18), with a stop pin (30) guided therein that is formed on the lift arm (10).

20. An opening mechanism according to claim 12, wherein the tie (20') has  
an oblong hole (31) where a stop pin (32) is guided that is mounted on the  
15 double-armed lever (17').

21. An opening mechanism according to claim 12, wherein at least one of  
the principal energy accumulator and the secondary energy accumulator is  
a gas spring (12, 16).

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22. An opening mechanism according to claim 12, wherein at least one of  
the principal energy accumulator and the secondary energy accumulator is  
a compression strut (33).